

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

Bathymetric Position Index (BPI) Zones Grid Derived from Gridded Bathymetry for Select U.S. Locations in the Pacific

**1.2. Summary description of the data:**

Bathymetric Position Index (BPI) Zones are derived for islands and banks across the U.S. Pacific Islands Region from a focal mean analysis on bathymetry and slope, and were created using the Benthic Terrain Modeler (<https://coast.noaa.gov/digitalcoast/tools/btm>). Cell values represent one of 4 classes (crest, depression, flat, slope) in an index of seafloor terrains.

The grids are based primarily on gridded multibeam bathymetry collected aboard NOAA Ships Hi'ialakai and Oscar Elton Sette and aboard R/V AHI (Acoustic Habitat Investigator) from 2003 to 2012 by the NOAA Coral Reef Ecosystem Program (CREP). Other sources of available data used to derive BPI Zones for a few locations include estimated depths derived from IKONOS satellite imagery from 2000 to 2002, LIDAR data from 2001 and 2007, and multibeam bathymetry collected in 2001 and 2002.

The BPI Zone grid generated for each location is available via the Pacific Islands Benthic Habitat Mapping Center (PIBHMC) website at [www.soest.hawaii.edu/pibhmc](http://www.soest.hawaii.edu/pibhmc). The data, associated map products, layer files, and detailed documentation (more specific than this pacific-wide record) about the data sources and data processing steps used are included in a zip file for each location.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2005, 2012, 2000 to 2001, 2005 to 2008, 2001, 2003 to 2010, 2007, 2000 to 2002, 2006 to 2007, 2004 to 2006, 2002, 2001 to 2002

**1.5. Actual or planned geographic coverage of the data:**

W: -156.100504, E: -155.822838, N: 20.061727, S: 19.772429  
West Hawaii

W: -160.292237, E: -160.01701, N: 22.056916, S: 21.729768  
Niihau

W: -178.378433, E: -166.11682, N: 28.453633, S: 23.62792  
W: 144.62592, E: 145.81568649, N: 20.03570278, S: 13.24126317  
W: 166.59824, E: -159.97264, N: 19.31627096, S: -0.38235459  
W: -171.2186230908, E: -168.131605, N: -10.934991, S: -14.604747

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*  
Map (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

Instrument: Not applicable

Platform: Not applicable

Physical Collection / Fishing Gear: Not applicable

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

Annette M DesRochers

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

Pacific Islands Fisheries Science Center

**2.4. E-mail address:**

annette.desrochers@noaa.gov

**2.5. Phone number:**

(808)725-5461

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

Rhonda Suka

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

Yes

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

Unknown

**5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Lineage Statement:

The method to develop the BPI data layers are generally described on the Pacific Islands Benthic Habitata Mapping Center website at [http://www.soest.hawaii.edu/pibhmc/pibhmc\\_mapping.htm#geomorph](http://www.soest.hawaii.edu/pibhmc/pibhmc_mapping.htm#geomorph). The data are generated in ArcGIS using Spatial Analyst and the Benthic Terrain Modeler (BTM). Bathymetric Position Index (BPI) is a second order derivative of bathymetry. The derivation evaluates elevation differences between a focal point and the mean elevation of the surrounding cells within a user defined annulus or circle. A negative value represents a cell that is lower than its neighboring cells (depressions) and a positive value represents a cell that is higher than its neighboring cells (crests). Larger numbers represent more prominent features on the seafloor, which differ greatly from surrounding areas. Flat areas or areas with a constant slope produce near-zero values. (Lundblad et al. 2006)

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:****5.2. Quality control procedures employed (describe or provide URL of description):**

Corrections for tide variation and vessel attitude are applied to the multibeam data and a CTD (Conductivity, Temperature, and Depth instrument) cast is performed regularly during data collection to correct for variance within the water column.

Multibeam data are tested for internal consistency; however, no effort is made to compare these data to external references or to other published data.

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

### 6.1. Does metadata comply with EDMC Data Documentation directive?

Yes

#### 6.1.1. If metadata are non-existent or non-compliant, please explain:

### 6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

#### 6.2.1. If service is needed for metadata hosting, please indicate:

### 6.3. URL of metadata folder or data catalog, if known:

<https://inport.nmfs.noaa.gov/inport/item/12616>

### 6.4. Process for producing and maintaining metadata

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: <http://www.nmfs.noaa.gov/op/pds/documents/04/111/04-111-01.pdf>

## 7. Data Access

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

### 7.1. Do these data comply with the Data Access directive?

Yes

#### 7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

#### 7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

### 7.2. Name of organization of facility providing data access:

Pacific Islands Fisheries Science Center

#### 7.2.1. If data hosting service is needed, please indicate:

**7.2.2. URL of data access service, if known:**

[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/mhi/benthichabitatlayers/WestHawaii\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/mhi/benthichabitatlayers/WestHawaii_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/mhi/benthichabitatlayers/Nii\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/mhi/benthichabitatlayers/Nii_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/FFS\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/FFS_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/kure\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/kure_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/ph\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/ph_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/Brooks\\_20m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/Brooks_20m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/Brooks\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/nwhi/benthichabitatlayers/Brooks_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guam\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guam_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guam\\_60m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guam_60m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/rota\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/rota_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/rota\\_60m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/rota_60m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/tinian\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/tinian_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/saipan\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/saipan_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/fdm\\_5m\\_bpiz.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/fdm_5m_bpiz.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/sarigan\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/sarigan_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guguan\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/guguan_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/alamagan\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/alamagan_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/pagan\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/pagan_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/agrihan\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/agrihan_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/asuncion\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/asuncion_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/maug\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/maug_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/supply\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/supply_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/FDP\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/FDP_10m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/gal\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/cnmi-guam/benthichabitatlayers/gal_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/OfuOlo\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/OfuOlo_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Tau\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Tau_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Tutuila\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Tutuila_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Rose\\_5m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Rose_5m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Swains\\_40m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/Swains_40m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Baker\\_20m\\_BPIzones.rar](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Baker_20m_BPIzones.rar)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Howland\\_40m\\_BPIzones.rar](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Howland_40m_BPIzones.rar)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Johnston\\_20m\\_BPIzones.rar](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Johnston_20m_BPIzones.rar)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Wake\\_60m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Wake_60m_BPIzones.zip)  
[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Wake\\_10m\\_BPIzones.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/pria/benthichabitatlayers/Wake_10m_BPIzones.zip)

**7.3. Data access methods or services offered:**

Data can be accessed online via the Pacific Islands Benthic Habitat Mapping Center website at <https://www.soest.hawaii.edu/pibhmc>.

**7.4. Approximate delay between data collection and dissemination:**

Unknown

**7.4.1. If delay is longer than latency of automated processing, indicate under what**

**authority data access is delayed:**

## **8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

### **8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

No Archiving Intended

#### **8.1.1. If World Data Center or Other, specify:**

#### **8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

Source data are archived, BPI Zone data products are accessible via the Pacific Islands Benthic Habitat Mapping Center website.

### **8.2. Data storage facility prior to being sent to an archive facility (if any):**

Pacific Islands Fisheries Science Center - Honolulu, HI

### **8.3. Approximate delay between data collection and submission to an archive facility:**

Unknown

### **8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

University of Hawaii School of Ocean and Earth Science and Technology, NOAA IRC and NOAA Fisheries ITS resources and assets.

## **9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*